

REMARKS

Please enter and consider the foregoing preliminary amendment in RCE. Claims 1-13 are pending in the application. Applicant has amended independent claim 1. Applicant respectfully submits that support for the amendments can be found in the specification at least on page 6, line 21 and with respect to FIGS. 3 and 4. In view of the foregoing amendment reconsideration and allowance of the presently pending claims is respectfully requested.

I. Response to 35 U.S.C. § 103 Rejection – Claims 1, 2, 6-7, 9-11 and 13

A. Statement of the Rejection

Claims 1, 2, 6-7, 9-11 and 13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 3,555,335 to *Johnson* in view of U.S. Patent No. 6,340,824 to *Komodo et al.*

B. Discussion of the Rejection

Applicant respectfully traverses the rejection of claims 1, 2, 6-7, 9-11 and 13 under 35 U.S.C. § 103(a) over the combination of *Johnson* and *Komodo et al.* for at least the reason that the proposed combination fails to disclose, teach, or suggest each element in the claims. For a proper rejection under 35 U.S.C. § 103(a), a combination of references must expressly or impliedly suggest all of the features of the claimed invention, *i.e.*, all of the features cited in the claims at issue. *In re Gorman*, 933 F.2d 982, 18 USPQ 1885 (Fed. Cir. 1991). Hindsight reconstruction is impermissible. *See, e.g., Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 19 USPQ2d 1111 (Fed. Cir. 1991). For a claim to be properly rejected under 35 U.S.C. § 103, “[t]he PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988) (Citations omitted).

Further, “[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” *In re Fritch*, 972 F.2d 1260, 1266, 23 U.S.P.Q.2d 1780 (Fed Cir. 1992).

Applicant respectfully submits that the proposed combination fails to disclose, teach or suggest Applicant’s light emitting device, comprising at least “a base substrate with a cavity **and a trough** to form a reflective cup,” a light emitter mounted on the projecting platform, ***the light emitter being smaller in outline than the projecting platform,***” and “a

coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, **and the trough** allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, **resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough,**” as recited in amended independent claim 1.

Claim 1

For convenience of analysis, independent claim 1, as amended, is repeated below in its entirety.

1. A light emitting device, comprising:
a base substrate with a cavity **and a trough** to form a reflective cup;
a projecting platform at the base of the cavity;
a light emitter mounted on the projecting platform, **the light emitter being smaller in outline than the projecting platform;** and

a coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, **and the trough** allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, **resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough.**

(Applicant’s independent claim 1 - *emphasis added*.)

Applicant respectfully asserts that the proposed combination fails to disclose, teach, or suggest at least the emphasized elements of pending claim 1 as shown above. Consequently, claim 1 is allowable. Specifically, the proposed combination fails to disclose, teach, or suggest Applicant’s light emitting device comprising at least “a base substrate with a cavity **and a trough** to form a reflective cup,” “a light emitter mounted on the projecting platform, **the light emitter being smaller in outline than the projecting platform,**” and “a coating having an

adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, **and the trough** allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, **resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough.**”

Johnson discloses a device for enlarging the apparent light-emitting area of an electroluminescent diode. The device is a faceted body having a specular surface designed to be placed around the light-emitting diode. *See Johnson*, Abstract. The diode 30 rests on a pedestal 31 and is surrounded by reflective facets 33, 34 and 35. *See e.g., Johnson*, col. 3, lines 38-44.

Komodo et al. discloses a light emitting element (reference numeral 2900 in FIGS. 103, 104, 105 and 106 for example) in a recess formed by a lead frame 2110. The light emitting element 2900 is covered by a wavelength converter (designated “FL” in FIGS. 103, 104, 105 and 106). The wavelength converter FL appears to be a rigid structure having a shape that precisely follows the outline of the light emitting element 2900. For example, when describing the wavelength converter FL, *Komodo et al.* states that “a piece including the fluorescent material is placed near the light extraction part of the light emitting element.” *See Komodo et al.* col. 39, lines 60-63. *Komodo et al.* continues stating that “a planar piece FL including the fluorescent material is placed above the light extraction part of the light emitting element.” *See Komodo et al.* col. 40, lines 5-8.

Further, *Komodo et al.* states that “[t]he pieces FL, FL1 and FL2 according to the embodiment can be formed by sintering a mixed material consisting an appropriate medium and the fluorescent material.” *See Komodo et al.* col. 40, lines 19-21. From this it is abundantly clear that the wavelength converter FL described in *Komodo et al.* is fabricated using one or more pre-formed pieces of material that are preformed in a shape that corresponds to the shape of the light emitting element and that is placed over the light emitting element.

In marked contrast to the proposed combination, the present invention discloses a light emitting device comprising at least “a base substrate with a cavity **and a trough** to form a reflective cup,” “a light emitter mounted on the projecting platform, **the light emitter being smaller in outline than the projecting platform,**” and “a coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the

light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, **and the trough** allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, **resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough.**”

Applicant respectfully disagrees with the statement in the Office Action that:

[t]he examiner notes that the limitation of the viscous slurry being applied over the light emitter and the particles being evenly settled on and around the light emitter before the coating is cured is directed to a process of manufacturing, which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of a difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Applicant respectfully submits that the claimed feature of:

wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, and the trough allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough

represents a state of the material containing the particles when applied over the light emitter, and not a process limitation for fabricating the light emitting device. In the same way that “the word ‘frozen,’ though descriptive of the process freezing, definitely describes an objective characteristic observable by inspection of the product,” Applicant respectfully submits that the coating being applied as a viscous slurry describes the state of the material when being applied. *See, e.g., Saxe & Levitt, “Product-by-Process Claims and Their Current Status in Chemical Patent Office Practice,” 42 J. Pat. Off. Soc’y 528, 536 (1960).*

Further, in a claim that recited “expanded perlite particles which are interbonded one to another by interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel,” the Court of Customs and Patent Appeals held that “interbonded...by interfusion” should be interpreted as a structural rather than a process limitation. *In re Garner*, 412 F.2d 276, 162 USPQ 221 (CCPA 1969). Accordingly, Applicant

respectfully submits that the coating being applied as a viscous slurry describes the state of the material when being applied and is not a process limitation.

However, in an effort to advance prosecution, Applicant has added additional structural features to independent claim 1.

Further, Applicant respectfully disagrees with the statement on page 11 in the Office Action that “[t]he applicant argues that the Komodo reference discloses planar particles that are sintered, as in Figure 96B (page 7). The examiner disagrees with this assertion and directs the Applicant to Figures 104 and 106 and the corresponding columns for disclosure of a viscous slurry of adhesive and particles applied over a light emitter in a cavity and where the particles of the coating evenly settle on and around the light emitter before the coating is cured.” Applicant respectfully submits that nowhere do any of the figures of *Komodo et al.* support an implementation of the wavelength converter FL as described in col. 47, lines 60-66 of *Komodo et al.*, as suggested by the Examiner. Applicant respectfully submits that while col. 47, lines 60-66 of *Komodo et al.*, appear to suggest that the wavelength converter FL might be applied as “a desired matrix such as solvent, coating material or resin mixed with the fluorescent material and the absorber” which “may be applied into the cup region of the lead frame 2110,” there is nothing in Figs. 104 or 106 (or elsewhere) in *Komodo et al.* that supports such an implementation.

Applicant respectfully submits that it would be impossible to deposit fluorescent material as described in col. 47, lines 60-66 of *Komodo et al.* and have the fluorescent material attain the shape shown in Fig. 104 or 106 of *Komodo et al.* using the disclosed structure. Furthermore, Applicant respectfully submits that such an implementation of the FL material in the structure shown in *Komodo et al.* would likely result in a structure that the Applicant describes in the current application as prior art. Applicant respectfully submits that Applicant’s FIG. 1 (referred to by the Applicant as prior art) is the structure that would result if the FL material were applied to the structure shown in Figures 104 and 106, as suggested in col. 47, lines 60-66 of *Komodo et al.*

Thus, the proposed combination fails to disclose, teach, or suggest each element of the Applicant’s independent claim 1. Consequently, Applicant respectfully submits that claim 1 is allowable over the proposed combination and requests that the rejection of claim 1 be withdrawn.

Because independent claim 1 is allowable, dependent claims 2, 6-7, 9-11 and 13 which depend either directly or indirectly from allowable independent claim 1 are also

allowable. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, Applicant respectfully requests that the rejection of claims 1 2, 6-7, 9-11 and 13 be withdrawn.

II. Response to 35 U.S.C. § 103 Rejection – Claim 8

A. Statement of the Rejection

Claim 8 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Johnson* in view of *Komodo et al.* and further in view of U.S. Patent No. 5,019,746 to *Merg*.

B. Discussion of the Rejection

Applicant respectfully traverses the rejection of claim 8 under 35 U.S.C. § 103(a) over *Johnson* in view of *Komodo et al.* and further in view of *Merg* for at least the reason that the proposed combination fails to disclose, teach, or suggest each element in the claims.

For at least the reason that the proposed combination fails to disclose, teach, or suggest at least Applicant's light emitting device comprising at least "a base substrate with a cavity *and a trough* to form a reflective cup," "a light emitter mounted on the projecting platform, *the light emitter being smaller in outline than the projecting platform*," and "a coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, *and the trough* allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, *resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough*," as recited in claim 1, Applicant respectfully submits that the proposed combination *does not* render Applicant's claim 8 obvious.

Further, Applicant respectfully submits that dependent claim 8 is allowable for at least the reason that dependent claim 8 depends from allowable claim 1. *In re Fine*, supra. Accordingly, Applicant respectfully requests that the rejection of claim 8 be withdrawn.

III. Response to 35 U.S.C. § 103 Rejection – Claims 1, 3-6 and 9-13

A. Statement of the Rejection

Claims 1, 3-6 and 9-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Japanese Patent No. JP 62-235787 in view of *Komodo et al.*

B. Discussion of the Rejection

Applicant respectfully traverses the rejection of claims 1, 2, 6-7, 9-11 and 13 under 35 U.S.C. § 103(a) over the combination of JP 62-235787 and *Komodo et al.* for at least the

reason that the proposed combination fails to disclose, teach, or suggest each element in the claims.

Applicant respectfully submits that the proposed combination fails to disclose, teach or suggest Applicant's light emitting device, comprising at least "a base substrate with a cavity **and a trough** to form a reflective cup," a light emitter mounted on the projecting platform, ***the light emitter being smaller in outline than the projecting platform,*** and "a coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, ***and the trough*** allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, ***resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough,***" as recited in amended independent claim 1.

Applicant respectfully asserts that the proposed combination fails to disclose, teach, or suggest at least the emphasized elements of pending claim 1 as shown above. Consequently, claim 1 is allowable. Specifically, the proposed combination fails to disclose, teach, or suggest Applicant's light emitting device comprising at least "a base substrate with a cavity **and a trough** to form a reflective cup," "a light emitter mounted on the projecting platform, ***the light emitter being smaller in outline than the projecting platform,***" and "a coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, ***and the trough*** allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, ***resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough.***"

JP 62-235787 discloses a plurality of light emitting elements 25 over a conducting layer 37 and a substrate 36 located in a recess 33. The recess includes a tapered reflecting surface 34 for reflecting the light emitted from the light emitting elements 25. *See JP 62-235787, Abstract.*

As stated above, *Komodo et al.* discloses a light emitting element (reference numeral 2900 in FIGS. 103, 104, 105 and 106 for example) in a recess formed by a lead frame 2110.

The light emitting element 2900 is covered by a wavelength converter (designated “FL” in FIGS. 103, 104, 105 and 106). The wavelength converter FL appears to be a rigid structure having a shape that precisely follows the outline of the light emitting element 2900. For example, when describing the wavelength converter FL, *Komodo et al.* states that “a piece including the fluorescent material is placed near the light extraction part of the light emitting element.” See *Komodo et al.* col. 39, lines 60-63. *Komodo et al.* continues stating that “a planar piece FL including the fluorescent material is placed above the light extraction part of the light emitting element.” See *Komodo et al.* col. 40, lines 5-8.

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[t]he examiner notes that the limitation of the viscous slurry being applied over the light emitter and the particles being evenly settled on and around the light emitter before the coating is cured is directed to a process of manufacturing, which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of a difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

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Further, in a claim that recited “expanded perlite particles which are interbonded one to another by interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel,” the Court of Customs and Patent Appeals held that “interbonded...by interfusion” should be interpreted as a structural rather than a process limitation. *In re Garnero*, 412 F.2d 276, 162 USPQ 221 (CCPA 1969). Accordingly, Applicant respectfully submits that the coating being applied as a viscous slurry describes the state of the material when being applied and is not a process limitation.

However, in an effort to advance prosecution, Applicant has added additional structural features with the amendment to independent claim 1.

Further, Applicant respectfully disagrees with the statement on page 11 in the Office Action that “[t]he applicant argues that the Komodo reference discloses planar particles that are sintered, as in Figure 96B (page 7). The examiner disagrees with this assertion and directs the applicant to Figures 104 and 106 and the corresponding columns for disclosure of a viscous slurry of adhesive and particles applied over a light emitter in a cavity and where the particles of the coating evenly settle on and around the light emitter before the coating is cured.” Applicant respectfully submits that nowhere do any of the figures of *Komodo et al.* support an implementation of the wavelength converter FL as described in col. 47, lines 60-66 of *Komodo et al.*, as suggested by the Examiner. Applicant respectfully submits that while col. 47, lines 60-66 of *Komodo et al.*, appear to suggest that the wavelength converter FL

might be applied as “a desired matrix such as solvent, coating material or resin mixed with the fluorescent material and the absorber” which “may be applied into the cup region of the lead frame 2110,” there is nothing in Figs. 104 or 106 (or elsewhere) in *Komodo et al.* that supports such an implementation.

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Thus, the proposed combination fails to disclose, teach, or suggest each element of the Applicant’s independent claim 1. Consequently, Applicant respectfully submits that claim 1 is allowable over the proposed combination and requests that the rejection of claim 1 be withdrawn.

Because independent claim 1 is allowable, dependent claims 3-6 and 9-13 which depend either directly or indirectly from allowable independent claim 1 are also allowable. *In re Fine*, supra. Accordingly, Applicant respectfully requests that the rejection of claims 1 3-6 and 9-13 be withdrawn.

IV. Response to 35 U.S.C. § 103 Rejections – Claim 8

A. Statement of the Rejection

Claim 8 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *JP 62-235787* in view of *Komodo et al.* and further in view of U.S. Patent No. 5,019,746 to *Merg*.

B. Discussion of the Rejection

Applicant respectfully traverses the rejection of claim 8 under 35 U.S.C. § 103(a) over *JP 62-235787* in view of *Komodo et al.* and further in view of *Merg* for at least the reason that the proposed combination fails to disclose, teach, or suggest each element in the claims.

For at least the reason that the proposed combination fails to disclose, teach, or suggest at least Applicant’s light emitting device comprising at least “a base substrate with a cavity *and a trough* to form a reflective cup,” “a light emitter mounted on the projecting

platform, *the light emitter being smaller in outline than the projecting platform,*” and “a coating having an adhesive material and particles of another substance, wherein the coating is a viscous slurry when applied over the light emitter in the cavity, and hardens when cured after being applied over the light emitter in the cavity, wherein when the coating, when being a viscous slurry, is applied over the light emitter, the platform, the cavity, *and the trough* allow the particles in the coating to be evenly settled on and around the light emitter within the cavity before the coating is cured, *resulting in an evenly dispersed, uniform thickness particle coating over the light emitter, the projecting platform and the trough,*” as recited in claim 1, Applicant respectfully submits that the proposed combination *does not* render Applicant’s claim 8 obvious.

Further, Applicant respectfully submits that dependent claim 8 is allowable for at least the reason that dependent claim 8 depends from allowable claim 1. *In re Fine*, supra. Accordingly, Applicant respectfully requests that the rejection of claim 8 be withdrawn.

CONCLUSION

In summary, Applicant respectfully requests that all outstanding claim rejections be withdrawn. Applicant respectfully submits that presently pending claims 1-13 are allowable and that the present application is in condition for allowance. Accordingly, a Notice of Allowance is respectfully solicited. Should the Examiner have any comment regarding the Applicant's response or believe that a teleconference would expedite prosecution of the pending claims, Applicant requests that the Examiner telephone Applicant's undersigned attorney.

Respectfully submitted,

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